

# **NOTICE**

**All drawings located at the end of the document.**

**Special Task Health and Safety Plan for the  
IHSS 118.1 Investigation Project**

**Revision: 0**

**September 1997**

This Special Task Health and Safety Plan addresses the task-specific hazards associated with the IHSS 118.1 Investigation Project. The IHSS 118.1 Investigation Project will be conducted using this Health and Safety Plan for the task- and area-specific hazards, and the Health and Safety Plan for the Groundwater Program (RFP/ER-SAF-94-GMP) for programmatic and general hazards.

**Groundwater Monitoring Program Subcontract**

**Special Task**

**Health and Safety Plan**

**Pre-Remedial Investigation of IHSS 118.8**

This is a

**CONTROLLED DOCUMENT (5)**

ENVIRONMENTAL MANAGEMENT DEPARTMENT

ENVIRONMENTAL MANAGEMENT DEPARTMENT

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COPY # 35

**Introduction**

The purpose of this Special Task Health and Safety Plan is to identify specific hazards and provide the additional requirements for safe work during the Pre-Remedial Investigation of Individual Hazardous Substance Site (IHSS) 118.1 - Multiple Solvent Spills West of Building 730. The requirements of this Special Task Health and Safety Plan are in addition to the requirements of the Groundwater Monitoring Program Health and Safety Plan, RFP/ER - SAF-94-GMP Rev. 1.

**Purpose and Scope**

This Special Task Health and Safety Plan will apply to activities involved with the Sampling and Analysis Plan for the Pre-Remedial Investigation of IHSS 118.1, RF/RMRS-97-059.

**Additional References**

In addition to the references cited in the Groundwater Monitoring Program Health and Safety Plan, the following references are included.

- EMD/OP GT.01 Logging Alluvial and Bedrock Material
- EMD/OP GT.05 Plugging and Abandonment of Boreholes
- EMD/OP GT.06 Monitoring Wells and Piezometer Installation
- EMD/OP GT.10 Borehole Clearing
- EMD/OP GT.17 Land Surveying
- EMD/OP GT.39 Push Subsurface Soil Sample

**GROUNDWATER MONITORING PROGRAM SUBCONTRACTOR  
SPECIAL TASK  
HEALTH AND SAFETY PLAN  
Revision Level 0  
Job No.**

**1. Items 1-9 to be completed by EG&G Special Task Project Manager.**

**Project Name** Pre-Remedial Investigation of IHSS 118.1

Task Geoprobe Investigation of Carbon Tetrachloride Plume

**Requested by** Annette Primrose

**Proposed Start-Up Date** \_\_\_\_\_ **19**      **Project/Task No.** \_\_\_\_\_

Rev. Level \_\_\_\_\_

**Prepared by/Reviewed by Groundwater Monitoring Program Subcontractor  
Health and Safety Officer**

Printed Name

Signature \_\_\_\_\_ Date \_\_\_\_\_ 19\_\_\_\_

**Reviewed by Groundwater Monitoring Subcontractor Site Safety Officer**

**Printed Name**

Signature \_\_\_\_\_ Date \_\_\_\_\_ 19\_\_\_\_

Approved by EG&G Special Task Project Manager

Printed Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_ 19 \_\_\_\_\_

**Title**

**Note to Project Managers:**

**A signed and completed copy of the Health and Safety Plan and a signed and completed copy of the safety briefing (p. 14) must be included in the project file.**

Groundwater Monitoring Program Subcontractor      SPECIAL TASK  
HEALTH AND SAFETY PLAN

Job No.

## 2. Project Description:

Pre-remedial investigation of IHSS 118.1 using Geoprobe equipment.

### 3. Location:

Individual Hazardous Substance Site (IHSS) 118.1 - Multiple solvent spills west of Building 730. (See Map on Page 25 )

**4. Facility/Work Site Description:**

Areas to be worked are in the vicinity of the T-9/T-10 tank group. Ground surface is relatively level. There are overhead and underground utilities.

### 5. Proposed Personnel and Tasks:

Project Manager Annette Primrose

Field Team Leader Craig Cowdery

Proposed Field Team

### Job Function/Tasks

(See Section 20)

Groundwater Monitoring Program Subcontractor SPECIAL TASK  
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6. Confined Space Entry

A confined space is defined as any space not currently used or intended for human occupancy, having a limited means of egress, which is subject to the accumulation of toxic contaminants, a flammable or oxygen deficient atmosphere, or other hazards, such as engulfment, or electrical or mechanical hazards should equipment be inadvertently activated while an employee is in the space. Confined spaces include but are not limited to storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, air pollution control devices, smoke stacks, underground utility vaults, sewers, septic tanks, and open top spaces more than four feet in depth such as test pits, waste disposal trenches, sumps and vats.

Will this task require entry into any confined or partially confined space? ☐ YES - Describe below  
☒ No

7. Cutting and Welding

Will this task involve use of a cutting torch or welding? ☐ YES - Describe below  
☒ No

8. Other Potential Hazards

<input checked="" type="checkbox"/> Chemical	<input checked="" type="checkbox"/> Trips, Slips, Falls
<input type="checkbox"/> Radiological	<input type="checkbox"/> Trenching/Shoring
<input type="checkbox"/> Fire/Explosion	<input checked="" type="checkbox"/> Heavy Equipment/Vehicular Traffic
<input checked="" type="checkbox"/> Heat Stress	<input checked="" type="checkbox"/> Overhead Hazards
<input checked="" type="checkbox"/> Electrical	<input type="checkbox"/> Unstable/Uneven Terrain
<input checked="" type="checkbox"/> Machinery/Mechanical Equipment	<input checked="" type="checkbox"/> Other - Describe below

6,7,8 Description/Other  
Overhead utilities (steam, electrical)

9. I, \_\_\_\_\_, attest that this information is accurate to the best of my knowledge and hereby request a Health and Safety Plan for the task(s) designated above.

Signature

Date

Title

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Groundwater Monitoring Program Subcontractor      SPECIAL TASK  
HEALTH AND SAFETY PLAN

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Job No.

10. Chemical/Radiological Hazard Evaluation

Waste Media

- ☐ Airborne Contamination
- ☐ Surface Contamination
- ☒ Contaminated Soil
- ☒ Contaminated Groundwater
- ☐ Contaminated Surface Water
- ☐ Solid Waste
- ☒ Liquid Waste
- ☐ Sludge

Hazardous Characteristics

- ☐ Ignitable
- ☐ Corrosive
- ☐ Reactive
- ☐ Explosive
- ☒ Toxic (non-radiological)
- ☐ Radioactive

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Substance

This task will involve the reasonable possibility of exposure to the substances listed below at concentrations or in quantities which may be hazardous to the health of the site personnel.

Primary Hazard (Rate: low, med, high, ext)

Substance	Inhalation of Gases/ Vapors	Inhalation of Dusts/ Mists	Ingestion	Dermal Absorption of Solids/ Liquids and/or Skin Contam.	Dermal Absorption of Gases/ Vapors	Corrosive/ Irritant	Ignit- ability	Reactivity/ Explosion
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See Attach. Table 1

Substance	Exposure Limit	IDLH Level	Health Effects
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**TABLE 1**  
**HAZARDOUS SUBSTANCES**

Primary Hazard Rating	Substance	Physical Description	Exposure Path	Corrosive/Irritant	Ignitable	Reactive/Explosive	Exposure Limit	IDLH Level	Health Effect
high	carbon tetrachloride	Colorless liquid with a characteristic ether-like odor	inhalation, absorption, contact w/ eyes or skin	no	no	no	2 ppm (skin)	200 ppm	Irritates eyes; depress central nervous system; nausea, vomiting; liver, kidney injury; drowsiness, dizziness, incoordination; potential occupational carcinogen
high	1,1,2,2-tetrachloroethane	Colorless to pale-yellow liquid with a pungent chloroform-like odor	inhalation, absorption, contact w/ eyes or skin	no	no	no	1 ppm (skin)	100 ppm	Nausea, vomiting, abdominal pain, tremor fingers; jaundice, hepatitis, liver tenderness; dermatitis; monocytosis; kidney damage; potential occupational carcinogen
high	chloroform	Colorless liquid with a pleasant odor	inhalation, absorption, contact w/ eyes or skin	no	no	no	2 ppm (skin)	500 ppm	Irritates eyes, skin; dizziness, mental dullness, nausea, confusion; headache, fatigue, anesthesia; enlarged liver; potential occupational carcinogen
high	bromoform	Colorless to yellow liquid with a chloroform-like odor	inhalation, absorption, contact w/ eyes or skin	no	no	no	0.5 ppm (skin)	850 ppm	Irritates eyes, skin, respiratory system; Central Nervous System depressant; liver and kidney damage
high	carbon disulfide	Colorless to faint yellow liquid with a sweet ether-like odor	inhalation, absorption, contact w/ eyes or skin	no	Class IB Flam.	no	1 ppm (skin)	500 ppm	Dizziness, headache, poor sleep, fatigue, nervousness, anorexia, low-weight; psychosis; Parkinson-like syndrome; ocular changes; coronary heart disease; gastritis; liver, kidney injury; eye, skin burns; dermatitis; reproductive effects
high	perchloroethylene	Colorless liquid with a mild, chloroform odor	inhalation, absorption, contact w/ eyes or skin	no	no	no	25 ppm	150 ppm	Irritates eyes, nose, throat, nausea, flushed face, neck; vertigo, dizziness, incoordination; headache, somnolence; skin erythema; liver damage; potential occupational carcinogen



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11. Ambient Air/Site Monitoring Procedures

The following instruments shall be used to monitor the work environment and workers' breathing zones prior to site entry and at the specified intervals.

Instrument	Monitoring Frequency				
<input checked="" type="checkbox"/> PID (HNU, OVM) w/ <u>11.7</u> eV lamp	<input checked="" type="checkbox"/> Cont.	15min.	30min.	hourly	other _____
<input type="checkbox"/> OVA	Cont.	15min.	30min.	hourly	other _____
<input type="checkbox"/> Combustible Gas Indicator	Cont.	15min.	30min.	hourly	other _____
<input type="checkbox"/> H2S Detector	Cont.	15min.	30min.	hourly	other _____
<input type="checkbox"/> Colorimetric Detector Tubes	Cont.	15min.	30min.	hourly	other _____
<input checked="" type="checkbox"/> Other (describe below)	* Cont.	15min.	30min.	hourly	other _____

Description/Other:

Integrated air sampling: Sampling will be conducted for carbon tetrachloride, chloroform, 1,1,2,2-Tetrachloroethane, perchloroethylene, carbon disulfide, and bromoform. NIOSH methods 1003, 1019, and 1600, or equivalent, will be followed.

\* Integrated sampling is to be initiated if positive indications on the PID are observed and when upgrading PPE to Level B.

12. Action Levels

Task personnel shall observe the following Action Levels:

Instrument	Action Level	Specific Action
PID	> Background in BZ (Breathing Zone) Sustained	Stop Work: Evaluate Increase in PPE

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Groundwater Monitoring Program Subcontractor      SPECIAL TASK  
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13. Personal Monitoring

☐ Passive Dosimeter

☒ Personal Air Sampling

☐ Other

Description/Other:

Charcoal Tubes

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14. Biological Monitoring/Medical Surveillance

☐ This project requires medical surveillance or biological monitoring procedures beyond the provisions of the routine medical surveillance program, see description below

Description:

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15. Onsite Control

Control boundaries have been established, and the Exclusion Zone (the contaminated area), Hotline, Decontamination Line, Contamination Control Zone and Support Zone (clean area) have been designated and are identified as follows:

- EZ: Geoprobe Operating Area designated by cones or caution tape.
- CRZ: Around EZ and at decontamination line which will include the Bit Wash Area. The CRZ will be designated by cones or caution tape.
- SZ: All other areas, not specifically designated.

(Name) E. Sorrels or K. Olson has been designated to coordinate access control on the work site during this task. No unauthorized person shall be allowed beyond the Contamination Control line.

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16. Personal Protective Equipment

Location	Job Function/Task	Initial Level of Protection						
Controlled Zone	Operation of Geoprobe with no detectable VOCs in BZ (PID)	B	C	<u>D</u>	1	2	3	other
	Any operations with VOCs > background with PID/visible solvent contamination.	B	C	D	1	2	3	other
		B	C	D	1	2	3	other
Decontamination Zone	For support ops with no detectable VOCs in BZ (PID)	B	C	<u>D</u>	1	2	3	other
	For support ops with detectable VOCs BZ (PID) and/or visible solvent contamination	B	C	D	1	2	3	other
		B	C	D	1	2	3	other

List the specific protective equipment and material (where applicable) for each of the Levels of Protection identified above

Level B \_\_\_\_\_

- ☒ Pressure demand airline -OR-
- ☐ Pressure demand airline with escape provisions
- ☒ Pressure demand SCBA

Level C \_\_\_\_\_

- ☐ Half face Air Purifying Respirator
- ☐ Full face Air Purifying Respirator
- ☐ Full face canister Air Purifying Respirator
- ☐ Standard work clothes
- ☐ Hard hat, steel toed boots, safety glasses
- ☐ Ear protection during drill rig operation
- ☐ Inner latex gloves
- ☐ Outer NBR (Nitrile Butyl Rubber) gloves

Level D Mod

- ☒ Standard works clothes (DOEs)
- ☒ Hard hat, steel toed boots, safety glasses
- ☒ Ear protection during drill rig operation
- ☒ Inner latex gloves
- ☒ Outer NBR gloves (viton)
- ☒ Leather gloves for any work with tools

Level \_\_\_\_\_

Where air purifying respirators are authorized, NA are the appropriate canisters/cartridges for use with the specific substances and concentrations anticipated. Cartridges shall be replaced at the start of each work day.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE KNOWLEDGE AND APPROVAL OF THE HEALTH AND SAFETY OFFICER AND THE PROJECT MANAGER

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Groundwater Monitoring Program Subcontractor , HEALTH AND SAFETY PLAN

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17. Decontamination

Personnel and equipment leaving the Controlled Zone shall proceed through the following decontamination stations and procedures from the decontamination zone:

Personnel Decontamination

<u>Station</u>	<u>Procedure</u>
CRZ	Wash Water and Liquinox Solution rinse water

Equipment Decontamination

<u>Station</u>	<u>Procedure</u>
Wash Basins	Wash and Rinse Geoprobe Components

The following decontamination equipment is required:

Wash basins, detergent (as required), waste containers

Emergency decontamination procedures:

Immediately wash skin if personnel get solvent on skin.

Immediately change clothing (DOEs) if solvent gets on clothes.

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18. Confined Entry Procedures        X   Not Applicable

Yes    N/A

              Provide Forced Ventilation

              Test Atmosphere For:

              (a)  $\text{XO}_2$

              (b) %LEL

              (c) Other

Yes    N/A

              Refer to Personal Protective Equip. (#16)

              Refer to Emergency Procedures (#29)

              Other Special Procedures

Descriptions/Other:

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19. Cutting/Welding Procedure        X   Not Applicable

Yes    N/A

              Relocate or Protect Combustibles

              Wet Down or Cover Combustible Floor

              Check Flammable Gas Concentrations (%LEL) in air

              Cover Wall, Floor, Duct and Tank Openings

              Provide Fire Extinguisher

Other Special Instructions:

Groundwater Monitoring Program Subcontractor SPECIAL TASK  
HEALTH AND SAFETY PLAN

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20. Onsite Organization and Coordination

Project Manager: Annette Primrose  
Field Team Leader: Craig Cowdery  
Site Safety Officer: Karen Olson

Field Team	Name	Job Function
	John Boylan	Project Geologist
	William Crawford	Geoprobe Staff
	Andrew Francisco	Geoprobe Staff
	Karen Olson	Site Safety Officer
	Earl Sorrels	HSS
	Craig Cowdery	Site Manager

21. Special Instructions

Use of a ventilation fan during periods in the work area will be used to ensure that no accumulations of VOC occur in the breathing zone.

The area downwind of the work area will be controlled to limit access to personnel.

Viton gloves will be worn any time a potential for contact with solvents or contaminated media exists.

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22. Sanitation Requirements

Potable water supply available on work site?

☒ Yes      Bldg. 701

Portable toilets required on work site?

☐ Yes      If Yes, how many? \_\_\_\_\_  
☒ No

Temporary washing/shower facilities required at work site?

☒ Yes      If yes, describe below.  
☐ No      If no, state location  
existing facilities.

Description:      Portable eyewash with shower nozzle

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23. Field Procedures Change Authorization

Instruction Number  
to be changed

Duration of Authorization Requested  
\_\_\_\_ Today only  
\_\_\_\_ Duration of Task

Date: \_\_\_\_\_

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Description of Procedures Modification:

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Justification:

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Person Requesting Change:

Verbal Authorization Received From:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

\_\_\_\_\_  
Time

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Approved By  
(Signature of person named above to be obtained  
within 48 hours of verbal authorization)

Groundwater Monitoring Program Subcontractor SPECIAL TASK  
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24. Emergency Procedures This page is to be posted at prominent location on site.

Yes No

X

On-site Communications Required?

Emergency Channel

#2911 or Emergency Button  
EMAD 5

Nearest Telephone B/701

#### Fire and Explosion

In the event of a fire or explosion, if the situation can be readily controlled with available resources without jeopardizing the health and safety of yourself, the public, or other site personnel, take immediate action to do so, otherwise:

2911

1. Notify emergency personnel by calling \_\_\_\_\_.
2. If possible, isolate the fire to prevent spreading.
3. Evacuate the area

#### Chemical Exposure

Site workers must notify the site health and safety officer immediately in the event of any injury or any of the signs or symptoms of overexposure to hazardous substances identified below:

Substances Present

Symptoms of Acute Exposure

First Aid

SEE TABLE 2



**TABLE 2**  
**CHEMICAL EXPOSURE**

Substance	Symptoms of Acute Exposure	First Aid
carbon tetrachloride	Irritates eyes; depress central nervous system; nausea, vomiting; liver, kidney injury; drowsiness, dizziness, incoordination	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately
1,1,2,2-tetrachloroethane	Nausea, vomiting, abdominal pain; tremor fingers; jaundice, hepatitis, liver tenderness; dermatitis; monocytosis; kidney damage	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately
chloroform	Irritates eyes, skin; dizziness, mental dullness, nausea, confusion; headache, fatigue; anesthesia; enlarged liver	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately
bromoform	Irritates eyes, skin, respiratory system; Central Nervous System depressant; liver and kidney damage	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately

Substance	Symptoms of Acute Exposure	First Aid
carbon disulfide	Dizziness, headache, poor sleep, fatigue, nervousness, anorexia, low-weight; psychosis; Parkinson-like syndrome; ocular changes; coronary heart disease; gastritis; liver, kidney injury; eye, skin burns; dermatitis; reproductive effects	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately
perchloroethylene	Irritates eyes, nose, throat; nausea; flushed face, neck; vertigo, dizziness, incoordination; headache, somnolence; skin erythema; liver damage; potential occupational carcinogen	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Medical attention immediately

Maximum concentrations identified from previous soil and water samples:

- 1) carbon tetrachloride 8.1E7 µg/kg in soil
- 2) 1,1,2,2-tetrachlorethane 6.1E6 µg/kg in soil
- 3) chloroform 3.8E6 µg/kg in soil
- 4) bromoform 1.7E6 µg/kg in soil
- 5) carbon disulfide 1.1E5 µg/kg in soil
- 6) perchlorethylene 2.5E6 µg/kg in soil

Groundwater Monitoring Program Subcontractor SPECIAL TASK  
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24. Emergency Procedures - Cont'd

On Site Injury Or Illness

In the event of an injury requiring more than minor first aid, or any employee reporting any sign or symptom of exposure to hazardous substances, immediately take the victim to Occ. Health located at Bldg. 122, phone 2594. In the event of life-threatening or traumatic injury, implement appropriate first-aid and immediately call for emergency medical assistance at 2911. The nearest designated trauma center is Avista Hospital located at Louisville, phone 673-1000.

Designated Personnel Current in First Aid/CPR (Names)

<u>Earl Sorrels</u>	<u>Karen Olson</u>
_____	_____
_____	_____
_____	_____

Designated Back-Up Personnel (Names)

Function

_____	_____
_____	_____
_____	_____
_____	_____

Required Emergency Back-Up Equipment

Emergency Response Authority

The Shift Super is the designated site emergency coordinator and has final authority for first response to on-site emergency situations.

Upon arrival of the appropriate emergency response personnel, the site emergency coordinator shall defer all authority but shall remain on the scene if necessary to provide any and all possible assistance. At the earliest opportunity, the site safety officer or the site emergency coordinator shall contact the project coordinator or health and safety officer.

Project Coordinator	<u>Annette Primrose</u>	Phone (w)	<u>966-4385</u>	(h)	_____
Health and Safety Officer	<u>Karen Olson</u>	Phone (w)	<u>966-6370</u>	(h)	_____
Health & Safety Supervisor	<u>Peggy Schreckengast</u>	Phone(w)	<u>966-6790</u>	(h)	_____

Groundwater Monitoring Program Subcontractor SPECIAL TASK  
HEALTH AND SAFETY PLAN

Job No. \_\_\_\_\_

25. Safety Briefing

The following personnel were present at pre-job safety briefing conducted at \_\_\_\_\_ (time) on \_\_\_\_\_  
\_\_\_\_ (date) at \_\_\_\_\_ (location), and have read the above plan and are familiar  
with its provisions:

Name	Signature
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Fully charged ABC Class fire extinguisher available on site?	YES _____
Fully stocked First Aid Kit available on site?	YES _____
All project personnel advised of location of nearest phone?	YES _____
All project personnel advised of location of designated medical facility or facilities?	YES _____

\_\_\_\_\_  
Printed Name of Field Team Leader or Site Safety Officer

\_\_\_\_\_  
Signature Date

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118.1 Investigation  
Response to Unknown Hazards

In the event that unexpected hazards or conditions are encountered during investigation activities, the project activities will pause to assess the potential hazard or condition. The project manager and field manager will be notified immediately, as well as the RMRS Safety Officer. The potential hazard or condition will be evaluated to determine the severity or significance of the hazard or condition. Based on this initial evaluation, a determination will be made whether to proceed with controls currently in place; segregate the condition or hazard from the project activity, if it can be done safely, or curtail operations to address the unexpected hazard or condition. Concurrence down the selected path must be obtained from the RMRS ER Director, Ann Tyson, or her designee.

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**Table 1. Emergency Contact Telephone and Pager Numbers**

Fire	x.2911	Poison Center	629-1123
Ambulance	x.2911	Security	x.2911

**Nearest Emergency Medical Services Are Located At:**      **Building 122 as shown on attached map.**

**Nearest telephone is located at:**      B701

**Additional Project Telephone Numbers**

Director- ER - Ann Tyson	x4829/d1101
Manager - ER- Marla Broussard	x6007/d4010/r3740
H&S Manager - Ken Jenkins	x5374/d7455/r4505
Project Manager - Annette Primrose	x4385/d4675/r3801
Project Geologist - Mike Bemski	x4090/d7466/r3805
Project Engineer - Craig Cowdery	x2055/d5466/r3736
H&S Supervisor - Peggy Schreckengast	x6790/d3059/r3702
HSS - Karen Olson	x6370/r3795
HAZMAT Emergency Response	x2911
Occupational Health General Information	x2594

Note: d= digital page. The digital page system can be activated on plantsite by dialing extension 4000, then following the instructions.

## PRE-REMEDIAL INVESTIGATION OF IHSS 118.1

### Preliminary Hazard Analysis (PHA)

10-Sep-97

A Pre-Remedial Investigation of Individual Hazardous Substance Site (IHSS) 118.1-Multiple Solvent Spills West of Building #370 at the Rocky Flats Environmental Technology Site (RFETS) is to be accomplished. This PHA/AHA is intended to fulfill the criteria of a Job Safety Analysis (JSA) in accordance with DOE Order 5480.9A, *Construction Safety and Health Program*. It is intended to identify and address job specific safety concerns in conjunction with the Groundwater Monitoring Program Health and Safety Plan and is not intended to replace or override any other applicable document. Any perceived conflict with higher level documents will be addressed by the responsible Health and Safety representative. A brief summary of the planned activities is as follows:

- Operation of Geoprobe equipment in support of the Pre-Remedial Investigation.
- Soil sampling via Geoprobe core(s).
- Solvent recovery well installation.
- Geological evaluation of substratum.
- Construction safety precautions in accordance with 29CFR1926 and applicable chapters of the Health and Safety Practices manual will be followed while working at IHSS 118.1. This will include the use of hard hats, safety glasses with side shields, and safety shoes at all times, and use of the "buddy system" for any work requiring power tools.

Any questions may be directed to Earl Sorrels (X5356) or Peggy Schreckengast (X6790).

## PRE-REMEDIAL INVESTIGATION OF IHSS 118.1

### Activity Hazard Analysis (AHA)

10-Sep-97

Activity	Hazard	Preventive Measures
General operation of Geoprobe equipment	General safety	<p>Construction safety will be in accordance with 29CFR1926, 29CFR1910, and DOE 5480.9A. Personnel required to enter the equipment operating area for this project will wear a Level D work uniform specified in the Groundwater Monitoring Program Health and Safety Plan; work clothes with long sleeves (DOE coveralls are available), safety shoes, safety glasses with side shields, a hard-hat and an orange vest for personnel in the vicinity of the Geoprobe during movement.</p> <p>A trained and qualified Health and Safety Specialist (HSS) will be required for continuous support.</p>
	Pinch or crush injury	<p>Personnel involved with Geoprobe setup and operation will be watchful of pinch and crush point potential. Leather gloves will be worn at the discretion of the Site Safety Officer.</p> <p>Only operators with specific training and qualification on the Geoprobe equipment to be utilized for investigation operations shall perform these evolutions.</p> <p>Personnel will at no time place any part of their body beneath a lifted load.</p>
	Noise	<p>Hearing protection is required during operation of the Geoprobe when noise levels exceed 85 dB. Monitoring to characterize noise levels will be conducted. Noise dosimetry will be utilized for personnel who may be exposed to an average of 85 dB for 8 hours. Personnel exposed above this level must be included in a hearing conservation program.</p>
	Cuts from hand or power tools.	<p>Leather gloves will be worn during all work involving hand or power tools. All circuits will be Ground Fault Circuit Interrupt (GFCI) protected and extension and power supply cords will be</p>



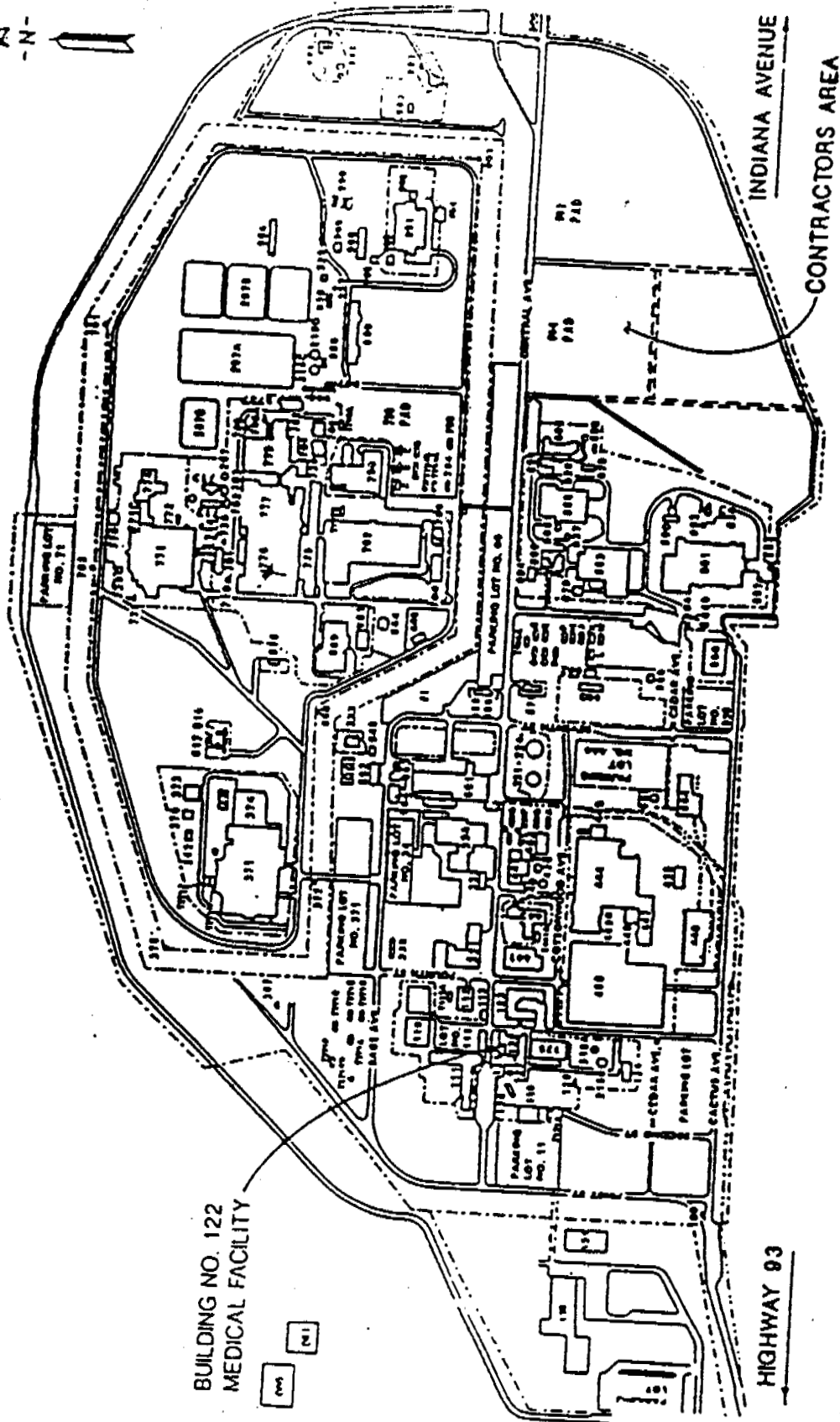
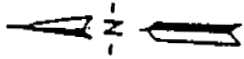
Activity	Hazard	Preventive Measures
		inspected prior to use.
	Electrical shock; overhead/ underground utilities	<p>At no time shall the Geoprobe equipment be brought to within 10 feet of potentially energized overhead utilities (electrical, steam).</p> <p>Underground utilities shall be located prior to Geoprobe operations.</p>
Geoprobe investigations	Chemical exposure	<p>In addition to Level D (work clothes , safety shoes, safety glasses, hard-hats), Personnel Protective Equipment (PPE) shall be modified to include two pair of chemical resistive gloves for handling Geoprobe components during use. This will include inner nitrile gloves and outer viton gloves.</p> <p>HSS shall evaluate the need to upgrade PPE to Modified Level D or Level B depending on the presence of solvent liquid or Breathing Zone (BZ) monitoring results with a Photoionization Detector (PID) &gt;background indications. Work shall be paused for any evaluation of this type.</p> <p>Removal of drive caps when the potential for liquid is indicated shall be done with a plastic bag covering the drive cap.</p> <p>If liquid is present during hammering operations protection from splashing at the bore shall be accomplished to direct any liquid down and away from personnel.</p> <p>Personal BZ air monitoring shall be accomplished using integrated sampling if PID indications are positive and PPE is upgraded to Level B.</p> <p>Use of a ventilation fan directed at the Geoprobe shall be used to minimize possible exposure to airborne solvent during conditions of no ambient wind air flow. The area downwind of the Geoprobe operation shall be controlled such that no inadvertent personnel exposures to airborne solvent occur.</p>

**Approved:**

**Signature and Date**

PM Annette Primrose  
FS Craig Cowdery  
H&S Peggy Schreckengast  
RE Bates Estabrooks

Annette Primrose 9-10-97  
Craig Cowdery 9/10/97  
Peggy Schreckengast 9-11-97  
Bates Estabrooks 9/10/97



BUILDING NO. 122  
MEDICAL FACILITY

HIGHWAY 93

INDIANA AVENUE  
CONTRACTORS AREA

CLIENT/PROJECT

EG&G - ROCKY FLATS  
GROUNDWATER MONITORING PROGRAM  
HEALTH AND SAFETY PLAN

DRAWN BDL

CHECKED CER

REVIEWED LEC

DATE

SEPT 1994

SCALE

NTS

FILE NO.

Denver, Colorado



Golder  
Associates

TITLE

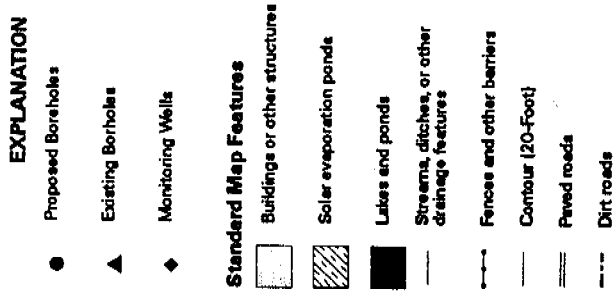
MEDICAL FACILITY MAP

JOB NO. 000 000 000 DMC NY / 000 000

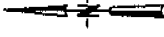
[illegible]

### **IHSS 118.1 Proposed Borehole Locations**

### Figure 1



**DATA SOURCE:**  
 Buildings, houses, hydrographic records and other structures from 1940 and 1950 aerial data  
 captured by USAS 5th, Los Angeles  
 Digitized from the original negatives, 195  
 Surveyed, measured, and plotted from digital elevation  
 model (DEM) data by James T. (JIM) and Amy T. and  
 LARRY to construct the DEMs data to create a 5-foot contour  
 map. The DEM data was captured by the American Geologic L.A. Los  
 Angeles, INC. (AGL) and digitized by the (T) and Amy T. and  
 LARRY. The DEM data was processed by AGS, Winter 1987.



Scale = 1 : 1000  
1 inch represents 140 feet



State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD27

**U.S. Department of Energy  
Rocky Flats Environmental Technology Site**



**Rocky Mountain  
Remediation Services, L.L.C.**  
Geographic Information Systems Group  
Rocky Mts Environmental Technology 200  
P.O. Box 604  
Golden, CO 80402-0604

MAP ID: 97-0180

September 08, 1997